

## AIJ Prize 2015 (Research Theses Division)

A series of studies on elucidation of microbial contamination mechanism  
and countermeasures against microbial contamination in indoor environment

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This work shows a series of detailed research findings on the issues of microbial contamination in indoor environment which were not studied synthetically and continuously until now. This work consists of three portions with the establishment of microbial contamination valuation method, the elucidation of the actual microbial contamination conditions in indoor environment and the countermeasures against the microbial contamination in indoor environment.

About the establishment of microbial contamination valuation method, experiments, in-situ tests, and theoretical analyses were performed on the elucidation and valuation method of the behavior of airborne microbes, and the microbial contamination mechanism in surface of building materials. About the actual conditions of the microbial contamination in indoor environment, the actual microbial contamination conditions in hospital waiting rooms, social welfare facilities, offices, and residences were clarified. Furthermore, a series of researches of the countermeasures against the microbial contamination in indoor environment were conducted on prevention of microbial contamination penetration (quantitative evaluation of the removal performance of airborne microbes by an air filter), removal of microbial contamination source (verification of the microbe removal effect of air conditioning system cleaning), development of an antibacterial coil, proposal of the antibacterial test method by the antibacterial effect evaluation index under real environment, and proposal of a disinfectant ability index by ozone gas.